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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/889,234	11/29/2001	Mark Glazier	08364.0024	9841

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EXAMINER

BURCH, MELODY M

ART UNIT	PAPER NUMBER
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3683

DATE MAILED: 11/21/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/889,234

Applicant(s)

GLAZIER, MARK

Examiner

Melody M. Burch

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 November 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 32-62 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 32-62 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 November 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description: RHV, RHS, PS, LUT, P, M, and LSV shown in figure 4. A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign(s) in the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.
2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore,
 - the load sensing valve including “first actuating means” and “second actuating means” (interpreted by Examiner as being elements 26 and 27, respectively) as claimed in claim 34;
 - the vehicle “body”, “one or more axles”, and “vehicle’s wheels” as claimed in claim 32;
 - the embodiment including three sensors – a sensor for detecting air pressure in the air suspension units, a detector responsive to a spacing between the vehicle body and the axle, and a sensor to give an electrical output corresponding to suspension pressure as claimed in claim 62;must be shown or the feature(s) canceled from the claim(s). Examiner notes that on pg. 11 lines 9-18 only the valve body 20, an inlet 21, an outlet 22, and a throttling

element 24 are listed as components of the load sensing valve. No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

3. Applicant is required to submit a proposed drawing correction in reply to this Office action. However, formal correction of the noted defect may be deferred until after the examiner has considered the proposed drawing correction. Failure to timely submit the proposed drawing correction will result in the abandonment of the application.

Specification

4. The disclosure is objected to because of the following informalities:
- The specification fails to provide the headings such as "Summary of Invention", "Brief Description of Drawings" etc. used in US Patent format.
- Appropriate correction is required.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:
- The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
6. Claims 32-48, 61, and 62 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claims are replete with 112 issues including but not limited to:

Re: claim 32. Claim 32 recites the limitation "the vehicle's wheels" in line 5. There is insufficient antecedent basis for this limitation in the claim. Examiner also notes that the use of contractions in claim language is not a preferred claim format.

Re: claim 33. It is unclear to the Examiner whether the sensor and control means of claim 33 are intended to be separate and distinct from the "means to vary the pressure within the suspension units" as claimed in claim 32. Examiner has interpreted the "means to vary the pressure within the suspension units" to include the control means of sensor 3 as disclosed on pg. 9 lines 18-23 of Applicant's specification. If Examiner's interpretation is correct, it is recommended that the claim be amended to include such language as --wherein said means to vary the pressure within the suspension units includes a sensor...and control means...--. Clarification is required.

Re: claim 34. It is unclear to the Examiner whether the first and second actuators of claim 34 are intended to be separate and distinct from the "means to vary the throttling effect of the load sensing valve in dependence on the pressure within the gas-filled suspension units" as claimed in claim 32. Examiner has interpreted the "means to vary the throttling effect of the load sensing valve in dependence on the pressure within the gas-filled suspension units" to include the first and second actuators in light of the specification.

Re: claims 61 and 62. Claims 61 and 62 recite the limitation "the control means" claimed, for example, in lines 4-5 of claim 62. It is unclear to the Examiner whether the Applicant is referring to the "control means to vary the throttling effect of the throttling valve" as claimed in claim 49 or the "control means responsive to the sensor output" as

claimed in claim 50. Also, the phrase "an electrical or electromechanical sensor" in line 2 of claim 61 and "a sensor" in line 2 of claim 62 are indefinite. It is unclear to the Examiner whether the sensors in claims 61 and 62 are intended to be the same or different from that set forth in claim 50.

Re: claim 61. Claim 61 recites the limitation "the pressure sensor" in the last line. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 32-35, 42-45, 47, 49-51, and 58-60 are rejected under 35 U.S.C. 102(b) as being anticipated by GB-836100.

Re: claims 32 and 49. GB-836100 shows in figure 1 a vehicle having a body 1 suspended on one or more axles 7 by means of gas-filled suspension units 3,5, the vehicle being provided with means 35 to vary the pressure within the suspension units to control the spacing between the body and the axle or axles and a braking system supplying a brake fluid to braking actuators 21 operable to brake the vehicle's wheels 9,11, and further comprising a load sensing valve 15,17 operable to apply a variable throttling effect to impede the flow of brake fluid to the braking actuators, characterized

by further comprising means 53,51,50,49,48 to vary the throttling effect of the load sensing valve in dependence on the pressure within the gas-filled suspension units.

Re: claims 33 and 50. GB-836100 shows a sensor 39 for detecting the air pressure in the air suspension units, and control means 43 responsive to the sensor output for varying the throttling effect of the load sensing valve.

Re: claims 34, 42, 43, 51, and 58-60. GB-836100 discloses the limitation wherein the load sensing valve includes a movable throttling element 17 having a first position wherein a maximum throttling effect is exerted, and a second position wherein a minimum throttling effect is exerted, and further comprises first actuating means 48,50 to urge the throttling element toward its second position with a force dependent on the pressure in the gas-filled suspension units, and second actuating means 57 to urge the throttling element toward its first position with a force dependent on the position of the throttling element and increasing as the throttling element approaches its second position.

Re: claim 35. GB-836100 shows the first actuating means being a fluid actuator to which the pressure of the gas-filled suspension units are communicated via element 45,47.

Re: claim 44. GB-836100 shows the load sensing valve including a movable throttling element 17 having a first position wherein a maximum throttling effect is exerted, and a second position wherein a minimum throttling effect is exerted, and further comprising a positioning actuator 53 operable to position the throttling element at a point between its first and second positions.

Re: claims 45 and 47. GB-836100 shows the vehicle further comprising means for sensing 39 the pressure within the gas-filled suspension units, and control means 43 responsive to the sensed pressure to control the positioning actuator via elements 3,5,45,47,48,50,51.

9. Claims 32, 34, 37-39, 49, and 51-55 are rejected under 35 U.S.C. 102(b) as being anticipated by WIPO 93/19959.

Re: claims 32 and 49. WIPO 93/19959 shows in figures 2, 4, and 5 a vehicle having a body Y suspended on one or more axles B by means of gas-filled suspension units 10,11, the vehicle being provided with means disclosed on pg. 9 line 5 to vary the pressure within the suspension units to control the spacing between the body and the axle or axles and a braking system supplying a brake fluid via element H to braking actuators disclosed on pg. 8 line 21 operable to brake the vehicle's wheels, and further comprising a load sensing valve F operable to apply a variable throttling effect to impede the flow of brake fluid to the braking actuators, characterized by further comprising means A,C,12 to vary the throttling effect of the load sensing valve in dependence on the pressure within the gas-filled suspension units.

Re: claims 34, 37-39, and 51-55. WIPO 93/19959 discloses the limitation wherein the load sensing valve includes a movable throttling element disclosed on pg. 8 lines 6-8 having a first position wherein a maximum throttling effect is exerted, and a second position wherein a minimum throttling effect is exerted, and further comprises first actuating means A,C to urge the throttling element toward its second position with a force dependent on the pressure in the gas-filled suspension units, and second

actuating means 12,30 to urge the throttling element toward its first position with a force dependent on the position of the throttling element and increasing as the throttling element approaches its second position. The second actuating means being a fluid actuator supplied with a controlled pressure being in the form of an airbag as disclosed on pg. 9 lines 15-25, the vehicle comprising a pressure regulator means 19 capable of supplying a reference fluid pressure to the second actuating means.

10. Claims 49, 50, and 61 are rejected under 35 U.S.C. 102(b) as being anticipated by US Patent 5615931 to Stumpe et al.

Re: claim 49. Stumpe et al. show in figure 1 a load sensing system for a braking system of a vehicle having a vehicle body supported on an axle by a pressurized air suspension unit 54 whose pressure is varied as the vehicle load varies, the load sensing system comprising a variable throttling valve or electrical selection of pressures based on the load as disclosed in col. 7 lines 7-12 operable to control the flow of brake fluid to a brake actuator 42, and control means 14 to vary the throttling effect of the throttling valve in dependence on the pressure in the air suspension unit.

Re: claim 50 and 61. Stumpe et al. show a sensor 58 for detecting the air pressure in the air suspension units, and control means 22 responsive to the sensor output for varying the throttling effect of the load sensing valve.

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claim 36 is rejected under 35 U.S.C. 103(a) as being unpatentable over GB-836100 in view of JP-6082471. JP-6082471 teaches in figure 2 the use of a first actuating means being an air bag (bottom portion of element 9). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the first actuating means of GB-836100 to have included an air bag, as taught by JP-6082471, in order to provide an alternate means of effecting movement of a brake force throttling element.

13. Claims 40, 41, 56, and 57 are rejected under 35 U.S.C. 103(a) as being unpatentable over WIPO 93/19959 in view of US Patent 5615931 to Stumpe et al. Stumpe et al. teach in col. 4 lines 55-60, col. 5 lines 61-64, and in col. 6 lines 60-66 the limitation of supplying a number of reference pressures and a vehicle comprising pressure sensing means 58, operable to sense the pressure in suspension units 54,56 and control means 14 operable to select one of the reference fluid pressures on the bases of the sensed pressure. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the pressure control means of WIPO 93/19959 to have included the number of reference pressures and the pressure sensing means, as taught by Stumpe et al., in order to provide a means of more accurately controlling the braking force modulation.

14. Claim 46 is rejected under 35 U.S.C. 103(a) as being unpatentable over GB-836100 in view of US Patent 4925251 to Picot et al. Picot et al. teach in lines 3-4 from the bottom of the abstract the use of a sensing means to detect the spacing between

the body and the axle of a vehicle. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the vehicle of GB-836100 to have included a sensing means to detect the spacing between the body and the axle of a vehicle, as taught by Picot et al., in order to provide a more accurate means of correcting a braking force of a vehicle subject to various loads by also taking into account height variations.

15. Claim 62 is rejected under 35 U.S.C. 103(a) as being unpatentable over Stumpe et al. in view of US Patent 4925251 to Picot et al. Stumpe et al. teach the use of two sensors 46 and 58 but does not specifically disclose that element 46 is a detector responsive to a spacing between the vehicle body and the axle. Picot et al. teach in lines 3-4 from the bottom of the abstract the use of a sensing means to detect the spacing between the body and the axle of a vehicle. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the vehicle of Stumpe et al. to have included a sensing means to detect the spacing between the body and the axle of a vehicle, as taught by Picot et al., in order to provide a more accurate means of correcting a braking force of a vehicle subject to various loads by also taking into account height variations.

Conclusion

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US Patents: 5735580 to Klink and 5303986 to VanDeMotte et al. teach the use of electronic load dependent brake force modulation, 4826259 to Biegel, 5486039 to Petiot, 4923253 to Pollner et al., 5052761 to Thony, 5201572 to

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Castel, 5039174 to Beacon et al., 5211450 to Gayfer et al., and CH-628117 teach the use of similar load dependent brake force modulating inventions.

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melody M. Burch whose telephone number is 703-306-4618. The examiner can normally be reached on Monday-Friday (7:30 AM-4:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Lavinder can be reached on 703-308-3421. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-7687 for regular communications and 703-305-7687 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1113.

mmb 11/12/02
mmb
November 12, 2002

M. C. Graham 11/14/2002
MATTHEW C. GRAHAM
PRIMARY EXAMINER
GROUP 310